

2.

International History, Philosophy and Science Teaching Group

NEWSLETTER

August 2008

www.ihpst.org

CONTENTS

- 1. *Science & Education* Latest Number (Vol.17 No.7)**
- 2. IHPST Tenth International Conference, June 2009**
- 3. History and Philosophy in Science Teaching (HIPST): A Science in Society Project of the European Union**
- 4. A Special German Journal Issue: What is Physics?**
- 5. A Project to Examine the Impact of Machian Epistemology in European Science Education**
- 6. Teaching Ethics and Peace to Science and Engineering Students: A Workshop, University of Hamburg, 15 -17 October 2008**
- 7. Hong Kong Project for Promotion of Nature of Science (NOS) and Science Technology and Society (STS)**
- 8. *Science & Education* Journal Report**
- 9. Darwinian Anniversary Year, 2009, Journal Special Issue, Call for Papers**
- 10. Applied HPS in the Classroom, Journal Special Issue, Call for Papers**
- 11. XXIII International Congress of History of Science and Technology
26 - 31 July, 2009, Budapest, Hungary**
- 12. Division of History of Science and Technology (DHST)**
- 13. Book Notes**
 - (i) David L. Hull & Michael Ruse (eds) (2007). *The Cambridge Companion to the Philosophy of Biology*, Cambridge University Press.
 - (ii) Jonathan Hodge & Gregory Radick (eds) (2003). *The Cambridge Companion to Darwin*, Cambridge University Press
- 14. Current Research**
- 15. Publications for Sale**
- 16. Coming Conferences**
- 17. IHPST Executive**
- 18. Newsletter Items**
- 19. IHPST Email List**

1. *Science & Education* Latest Number (Volume 17, No.7)

Volume 17, Number 7 of *Science & Education* has been published and mailed to subscribers.

Contents are:

PETER DAVSON-GALLE / Why Compulsory Science Education Should not Include Philosophy of Science

ELIZABETH MARY CAVICCHI / Historical Experiments in Students' Hands: Unfragmenting Science through Action and History

PAVLOS MIHAS / Developing Ideas of Refraction, Lenses and Rainbow through the Use of Historical Resources

MARK JOSEPH LATTERY / The Long-Decay Model of One-Dimensional Projectile Motion

The above articles, and all published articles since Volume One, 1992, and all articles that are currently accepted and 'in print', are available on the web via Springer's journal site:

www.springer.com/journal/11191 .

Journal subscription (print version) can be effected at www.ihpst.org

2. IHPST Tenth International Conference, June 2009

The University of Notre Dame's HPS Graduate Program and Reilly Center for Science, Technology, and Values will host the 2009 Tenth biennial IHPST meeting June 24-28, 2009 on the Notre Dame campus in South Bend, Indiana. It will continue the IHPST tradition of sustained and serious research being discussed in a collegial and convivial atmosphere.

The Springer Lecture will be given by Robert T. Pennock who is an associate professor in the Lyman Briggs College and the Department of Philosophy and the Department of Computer Science at Michigan State University. He received his PhD in History and Philosophy of Science from the University of Pittsburgh in 1991. Pennock's research focuses on epistemic and ethical values as they relate to scientific methodology, and also on using the 'behaviour' of artificial life to examine processes of evolutionary change. He is the author of *Tower of Babel: The Evidence against the New Creationism* (MIT Press, 1999), which provides a critical analysis of the significant developments in the creationist movement in the 1990's, and editor of *Intelligent Design Creationism and Its Critics* (MIT Press, 2001).

Among Pennock's 2007 publications are articles on 'Investigating the Emergence of Phenotypic Plasticity in Evolving Digital Organisms', 'Learning Evolution and the Nature of Science using Evolutionary Computing and Artificial Life', 'Models, Simulations, Instantiations and Evidence: The Case of Digital Evolution', 'God of the Gaps: The Argument from Ignorance and the Limits of Methodological Naturalism' and 'Biology and Religion' the last in the *Cambridge Companion to Philosophy of Biology*.

Apart from scholarly pursuits, Pennock is a staunch defender of proper and sound science education. He was an expert witness in the critical Kitzmiller et al v. Dover Area School Board trial of 2005; he is president of Michigan Citizens for Science; and chair of the Education Committee of the Society for the Study of Evolution; he has long been on the Editorial Committee and a reviewer for *Science & Education*.

The submission date for conference proposals is Sunday March 15, 2009. Panel proposals on thematic topics are welcome; ideally planning for such panels should begin now.

Questions in advance for the formal call for papers can be sent to the conference chair, Don Howard, Philosophy Department, University of Notre Dame, (dhoward1@nd.edu).

3. History and Philosophy in Science Teaching (HIPST): A Science in Society Project of the European Union

For a better integration of science in society, and society in science, it is of vital importance to promote young people's interest in science, to encourage their critical and creative ways of thinking, to improve science education and, eventually, the uptake of scientific careers in general. Sustained learning of science implies many different dimensions. One often ignored, but important dimension is learning about the way how scientific knowledge is generated. Moreover, the objectives and motivations to do science, the scientific methods, the empirical fundament, social and cultural aspects are as important as philosophical foundations of science, as scientific concepts and their use. The acquisition of knowledge about the nature of science (NOS) is essential for democratic societies which partly rest their decision-making on rational and scientific criteria.

The HIPST project works with ten partners from eight countries (including Italy, Poland, Portugal, UK, Hungary, Greece, Israel, and Germany) covering R&D, policy and implementation aspects of HPST. The project's duration will be two years (starting February 2008). An international advisory board supervises and supports project activities.

HIPST aims at the raising of understanding of the relationship between science, technology, and society, and to foster science education and public understanding of science in Europe. The project has three global objectives:

- To increase the inclusion of history and philosophy of science in science teaching for the benefit of scientific literacy.
- To improve strategies for development and implementation of domain-relevant materials and teaching techniques into educational practice.
- To strengthen the cooperation and to establish a permanent infrastructure of sustainable networking of all involved stakeholders in the field of scientific literacy and public understanding of science (school science teachers, museum experts, researchers).

HIPST establishes a sustainable network between the project partners for the development and exchange of know-how and experiences in the inclusion of historical and philosophical components in science teaching programmes. Over the course of the project three international meetings will be held. Three national meetings in each participating country support project activities and evaluate the national situations regarding the implementation of HPS in science teaching. Main results will consist of appropriate teaching material developed, evaluated, exchanged, and adapted by thematic working groups, including experimental equipment for science teaching. Experimental equipment will be based on the approach of replication developed by the Oldenburg group. According to this approach learning scientific content and learning about NOS will be fostered if students re-enact scientific experiments of the past with instruments reconstructed closely to historical patterns. Short teaching films about experiments of the history of science will supplement the media available.

The thematic working groups in each country meet about once a month. They focus on the development, adaption and evaluation of teaching material closely related to the practice of school science teachers or to the needs of science museums. The underlying model of development comprises two loops of developing, testing, evaluating and refining the material. This model aims at

the development of effective HPS related material on the one hand. On the other the integration of practitioners of teaching science into the whole process assures a high level of acceptance of the project results in the communities of science teachers and science museums. Teachers for example bring along their on-the-job knowledge and experiences. They add their ideas and methods and didactical creativity into the developmental process. Researchers on the other hand assure with their knowledge of the history and philosophy of science as well as of research in science teaching a high level of quality of the products intended.

The material collected and developed this way will firstly be translated into English and into the other national languages afterwards. Furthermore, a wiki system will be established as a tool to provide further resources of teaching and learning about HPS to a wider public. Thus, in each of the participating countries the availability of material for teaching and learning with HPS will be enhanced.

A central idea of the project is to bring together an HPS oriented approach of teaching and learning about NOS with an inquiry learning approach. Ideas and research activities of past scientists serve as a means for guiding the students' own inquiry activities and as a reference point for helping students reflect on their own learning activities.

A further central objective of the project is to obtain further research evidence about the efficacy of teaching and learning with HPS in school science. To archive this aim a sub-project will be established collecting and analyzing empirical data on students' learning, the development of their interests in and attitudes towards science.

Further information about HIPST is available on the following project website
<http://www.hipst.ul.pt/>

or contact:

Dr. Dietmar Hoettecke
Institute for Science Education
Dep. of Physics
P.-O.Box 330440
University of Bremen
D-28334 Bremen
postmaster@dietmar-hoettecke.de

4. A Special German Journal Issue: What is Physics?

Teaching and learning about the nature of science (NOS) is at least implicitly stressed by the German national standards for science teaching and the recently released core curricula. On the other hand many science teachers do not have an adequate knowledge of NOS. Moreover strategies, methods and contents for teaching this topic are lacking. Hence, a special issue of a German teacher journal called *Naturwissenschaften im Unterricht – Physik*, Vol. 19, No. 103 (February 2008, www.unterricht-physik.de) (Science Teaching – Physics) was edited by Dietmar Höttecke (University of Bremen, Germany).

The journal is very well known among German physics teachers and aims at inspiring pre-service and in-service teachers of secondary and upper-secondary schools to enrich their own teaching with more sophisticated ideas and reflections on physics as a process.

The introductory article by *Dietmar Höttecke* shows that it is NOS teaching cannot be avoided because philosophical stances are unavoidable even in traditional ways of teaching. He provides a model of science as a process, discusses central philosophical ideas about science and highlights the idea of explicit reflection on NOS with critical incidents. Finally he gives an overview of a range of methods on how to teach NOS. The methods are ordered and compared along the dimensions students' activity and the methods' relation to research in the natural sciences.

Ernst Kircher highlights the role of metatheoretical reflections in science teaching. *Patricia Grygier* focuses in her article the question of how reliable observations in science are. With the help of optical illusions she shows how students' critical reflections on their own observations and scientific observations in general can be enhanced. *Johannes Günther* focuses on black box experiments as an analogy to the problem solving activity of scientists. A large variety of exemplars illustrate how students may benefit from the use of black boxes in order to relate their own problem solving activities to those of real scientists. The history of science as a means to teach and learn about NOS is a central aspect in *Peter Heering's* article. He advises teachers to use the historical development of electrostatics to demonstrate the progress of science from phenomena to theories. *Josef Leisen* introduces the method of scenic dialogs for enhancing students' identification with and reflections on historical episodes and scientists. Students read a fictive dialog about world views of various of scientists from Aristotle to Copernicus and reflect on the role of evidence and ideas and the reasons for change and development in science. *Lutz Kasper* introduces a CD-ROM about the historical development of knowledge and theories about magnetism. Finally *Falk Rieß* and *Dietmar Höttecke* point out how obscure branches of science like research on psi phenomena (e.g. telekinesis) inspire students discussions on what may count as science.

Dr. Dietmar Hoettecke
Institute for Science Education
Dep. of Physics
P.-O.Box 330440
University of Bremen
D-28334 Bremen
postmaster@dietmar-hoettecke.de

5. A Project to Examine the Impact of Machian Epistemology in European Science Education

[The following is the draft of a proposed EU project to be coordinated by Hayo and Karl Hayo Siemsen. Details of the EU programme can be found at:
http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=usersite.FP7DetailsCallPage&CALL_ID=117
Researchers interested in this Machian project should contact Hayo Siemsen
(hayo.siemsen@gmail.com)]

Abstract

Europe has a common – though hidden – idea of science education. This idea was jointly developed by researchers from many European countries in the 19th and the beginning of the 20th century¹, which was then disturbed by two world wars. Many successors to this idea survived through the World Wars in Europe and also – through emigration – in other parts of the world, although their joint origin and many dimensions of the original idea have been lost in their characteristics and

¹ This time, the historians call “the long 19th century”, i.e. the time before WWI.

shadings in different countries. But the set of ideas² is not lost completely. They do not have to be re-imported from the USA, as we initially had assumed. This project will attempt to recover the original idea and see, how its different dimensions can be enculturated into different European cultures in order to serve as a common idea on science education once again.

Goals

Current science education in Europe can be consistently evaluated on the basis of the general epistemology of Ernst Mach and his resulting genetic science education. This genetic epistemology of science education has left many traces in current science education. Most of the current (even competing) theories and practices of science education can thereby be compared and meaningfully integrated into Mach's epistemological framework. Different forms and practices can then be experimentally tested. This general science education epistemology is independent of gender and applicable for all ages, for schools, museums, etc.

For this purpose, partners as well as advisory experts and institutions (archives, institutes, etc.) from different countries in Europe and around the world will be coordinated to join in a concerted effort. They will work trans-disciplinary, uncovering their own history of ideas back to the 19th century and thereby as well finding the common European roots, especially those that have been lost due to the World Wars. Most historical studies only go back to the 20th century and therefore miss the time before the First World War, when scientific collaboration was still largely unimpeded by national animosities. There have already been several attempts in this direction, but as they were only national or bi-national, and focussed only on one part of science education, such as physics or mathematics, the European dimension has as yet not been recognized.

Background

What is this common idea? The idea is a synthesis of two developments: On the one hand, the growing need for a general science education "for all" in the 19th century led to a scientific approach on science education. On the other hand, the development of the idea of evolution, i.e. that all biological processes can be seen as parts with similar characteristics of the same developmental process, became pre-eminent through the publication of the "Origin of the Species" in 1859 by Charles Darwin. The principle of evolution required a rethinking of the concepts on humans, human culture, science and epistemology. Therefore, a new synthesis was needed, also for the epistemology of science education.

This synthesis was first tried by Ernst Mach (1863a, 1863b). He soon had many collaborators and successors in many different countries, who in their scientific efforts all built on common roots (Comenius, Hume, Berkeley, Kant, Herbart, Comte, Stallo, Maxwell, Helmholtz, Fechner, Wundt, Ribot, Külpe, etc.) in their psychophysical research. Our current research has already uncovered several of these strands, which include several countries³ and a broad range of subjects:

Germany: Gestalt Psychology (Max Wertheimer, Otto Selz, etc.), Wilhelm Ostwald (chemistry, education), Albert Einstein (physics), Wolfgang Pauli (philosophy of physics), Martin Wagenschein (physics education), etc.

Austria: The Vienna Circle (Neurath, Carnap, Schlick, etc.), Höfler (education), the Bühler Institute of Psychology (Lorenz, Brunswick, etc.), Ludwig Wittgenstein (philosophy), Karl Menger (mathematics education), etc.

Finland: Eino Kaila (gestalt psychology, philosophy)

² In principle, one idea (epistemology) is the root for a whole set of ideas (education). Therefore in the following, depending on the perspective, idea in singular or ideas in plural will be used.

³ It shall be added that the list is incomplete and many more names can probably be found also in countries not mentioned in the list as yet. Also, as many researchers had to emigrate, they had influences in several countries, which is not reflected in the list.

Czech Republic: Struhal (physics, experiments)
 France: Alfred Binet (physiology, psychology), Henri Bergson (philosophy), Henri Poincaré (mathematics), Pierre Duhem (philosophy of science)
 UK: Bertrand Russell, A.N. Whitehead, Henry Armstrong (chemistry education), John Bradley (chemistry education), etc.
 Switzerland: Lämmel, Larguier des Bancelles (psychology, philosophy), Jean Piaget (education), Ferdinand Gonseth (mathematics, philosophy), George Polya (mathematics education)
 The Netherlands: L.E.J. Brouwer (mathematics), Gerrit Mannoury (mathematics), Beth (mathematics, education), Hans Freudenthal (mathematics education)
 Belgium: George Sarton (history of science), Leo Apostel (philosophy of science, education)
 Denmark: Harald Höffding (philosophy), Jörgen Jörgensen (history and philosophy of science for education)
 USA: pragmatism (William James, John Dewey, Charles Peirce, etc.), Paul Carus (editor), James Conant (history of science, rector at Harvard), Gerald Holton⁴ (physics education), Kline, Arnold Arons, etc.
 Canada: A.I. Wittenberg (mathematics philosophy and education)
 India: C.V. Raman (physics, philosophy of science)

Of all the researchers on science education mentioned above, Mach can still (from current research, see Siemsen & Siemsen 2008a, 2008b, Euler 2006) be regarded as the most central and influential as well as probably the most consistent in his epistemology. Mach also had the most influence on science education in many countries (Germany, Austria, Switzerland, Finland, Czech Republic, the Netherlands, France, USA, etc.). That this is little known is due to the problem that Mach's influence often has to be regarded as primarily intuitive and therefore, as Einstein called it, "sucked-in with the mother's milk", without being conscious⁵. Therefore, the historical analysis on Mach often has to rely on conceptual analyses for identifying influences and similarities, especially in the cases where other evidence (e.g. letters, etc.) have been lost in the turbulences of the wars.

The current approach of the EU on science education has been explicated in the Gago and Rocard reports (2004, 2007). The more detailed "Gago Report" (Gago et al. 2004) stresses the "variety of teaching and learning methods" (Gago, 2004, pp. 150/151), which should be evaluated by empirical assessment. Methods alone, such as using experiments, cannot be shown to be successful. The key question lies in how these methods are used, which is the question for a consistent⁶ epistemology of education. The report sees "broad agreement" that can be reached "about the need to stimulate and maintain young children's curiosity regarding natural phenomena" (p. 152). This certainly requires "hands-on" and "minds-on" approaches. Any reforms are difficult, because the issue is so deeply embedded in culture. But the report explicitly rejects narrow elitist solutions and asks for a broad approach based on general popularization ideas. "Students often perceive science as too abstract because it is trying to teach fundamental ideas without sufficient experimental, observational and interpretational background, without showing sufficient understanding of their implications, and without giving them the opportunity for a cumulative development of understanding and interest.

⁴ See also Holton 1992.

⁵ Therefore, also Mach's critics have often subconsciously taken over several of his ideas (see for example Visser 2002).

⁶ Thus, different ideas have to be seen monistically, i.e. as an epistemological "whole". This is the problem of too specialized views, which tend to blend out important aspects and are therefore potentially detrimental in the empirical evaluation. Mach's epistemology – especially in science and education – takes a relatively unique monistic approach and therefore leads to a very consistent science education epistemology. Other approaches, for example a curricular approach or an inquiry approach, can fail if they exclude other methods as A. I. Wittenberg (1968) has predicted in his essay: "Specialization: A Service or Betrayal of Culture?" This problem of over-specialization is a tendency in modern science in the USA and in Europe, which endangers the achievements in the area of education, especially when disseminated broadly. As an example, see Holton's analysis of why and how the general education movement failed in the US (Holton 2004). This important aspect will be avoided by the project, because of the Machian monistic basis.

Science curricula are often excessively factual, [...]. More importantly, the traditionally established content-delivery model of teaching, which sustains factually oriented curricula, tends to distort student understanding of the nature of both science and knowledge by ignoring the methodological, reasoning and cultural aspects of science.” (p. 184)

This project explicitly focuses on the cultural aspects of science. Thereby it aims to avoid the situation in the USA, where a “war” has been waged in science and especially in mathematics education (see for example Klein 2003) between different didactical approaches⁷. After careful research, we now think that this type of clash should not be “imported” to Europe from the US, especially as the results have been shown to be extremely detrimental to science education in general as the abysmal US results in the PISA study have clearly shown⁸. Additionally to this effect, any science education concept from the US has to be enculturated to Europe. According to prior experiences, for example from Finland, it is far from clear, if this can be made to work out. Therefore, this project aims at avoiding both problems by focussing on the so called “third way”, going back to the epistemological basis and a monistic (holistic) view. On this basis then, different approaches can be implemented as useful tools, improving the teachers’ understanding on how and when to use them.

Key Tasks

1. Research historical roots of science education, especially the epistemology of science education (by literature, archives, etc., this includes making central texts better available to international researchers and users, such as teachers, by translating them)
2. Compare roots and find common links (genesis of ideas, especially the *status nascendi* by historio-critical and conceptual analysis)
3. Compare findings to current science education (strengths and missing dimensions) and OECD PISA results as empirical proxy⁹
4. Implement experimental settings on empirical variations of science education (holistic approach, i.e. by measuring the effect of a single missing dimension in each case)
5. Prepare plan for a European science education, which is built on a consistent and general epistemology
6. Report and disseminate results and recommendations

Provisional Partners¹⁰

Participation agreed in principle:

FHOOW, University of Applied Sciences, Emden, Germany

Prof. Dr. Karl Hayo Siemsen (education, electrical engineering, computer sciences)

PhD. Hayo Siemsen (economics, philosophy and psychology of science)

University of Graz, Austria

Prof. Dr. Adolf Hohenester (physics, physics didactics)

University of Nancy, France (network of 4 universities)

Prof. Dr. Gerhard Heinzmann (philosophy, history; archives Poincaré and Binet)

Prof. Dr. Bernard Andrieu (history of psychology, archive Binet)

University of Helsinki, Finland

Prof. Dr. Kaarle Kurki-Suonio (physics, physics didactics)

⁷ A detailed analysis of this is part of an ongoing research to be published in the near future.

⁸ Nevertheless, some educational ideas in the US, such as the general education movement or the project zero group, have been built on Machian ideas and are therefore very interesting to study historically and learn from empirically. Contacts and cooperation in this direction will therefore be included into the project.

⁹ For applicability and limitations of the PISA-study as empirical proxy to Machian education, see Siemsen & Siemsen (2008a and 2008b).

¹⁰ Please note: As this is the first draft of the project proposal, most people and institutions mentioned here have not finally agreed, neither to the contents of this draft, nor to their participation in the project. At this stage, new entrants can still be included in the project (contact address, see first page).

Prof. Dr. Ismo Koponen (physics didactics)
Dr. Ari Hämäläinen (physics didactics, experimentation)
De Montfort University, Leicester, UK
Prof. Dr. Hussein Zedan (STRL, software technology)

Advisory Experts

Prof. Dr. Weiler (FHOOW; physics)
Prof. Dr. Henk Visser (University of Maastricht, the Netherlands, retired; mathematics)
Prof. Dr. Charles van den Hoevel (University of Maastricht, the Netherlands, history of arts and visualization)
Prof. Dr. Susan Sterrett (Duke University, philosophy of the natural sciences)
Prof. Dr. Michael Matthews (President of IHPST, editor of *Science & Education*)

References

- Euler, M.: 2006, Revitalizing Ernst Mach's Popular Scientific Lectures, *Science & Education*, Springer.
- Gago, J.M., et al.: 2004, *Europe needs more scientists*, report by the high level group on increasing human resources for science and technology in Europe, European Commission.
- Holton, G.: 1992, 'Ernst Mach and the Fortunes of Positivism in America', *Isis*, Vol. 83/1: 27-60.
- Holton, G.: 2004, "Only Connect": Bridging the Institutionalized Gaps between the Humanities and Sciences in Teaching, unpublished manuscript.
- Klein, D.: 2003, 'A Brief History of American K-12 Mathematics Education in the 20th Century' in Royer, J., *Mathematical Cognition*, Information Age Publishing.
- Kline, M.: 1962, 'On the Mathematics Curriculum Of The High School', *American Mathematical Monthly*. <http://michel.delord.free.fr/kline62.html> Cited 14.4.2008.
- Kükelhaus, H.: 1978, *Unmenschliche Architektur – von der Tierfabrik zur Lernanstalt*, Gaia, Köln.
- Mach, E.: 1863a / 1978, 'Vorträge über Psychophysik', *Österreichische Zeitschrift für praktische Heilkunde* 9, Wien, in Thiele, J. (ed.).
- Mach, E.: 1863b, *Compendium der Physik für Mediciner*, Wien: Braumüller.
- Matthews, M.R.: 1994, *Science Teaching: The Role of History and Philosophy of Science*, Routledge, London.
- OECD: 2006a, *Education at a Glance 2006 – Executive Summary*, <http://www.oecd.org>. Cited 21 Aug 2007.
- OECD: 2006b, *Assessing Scientific, Reading and Mathematical Literacy – A framework for PISA 2006*, <http://www.oecd.org>. Cited 14 Jan 2008.
- Rocard, M., et al.: 2007, *Science Education Now: A Renewed Pedagogy for the Future of Europe*, report by the high level group on science education, European Commission.
- Siemens, H., Siemens, K.H.: 2008a, 'Resettling the Thoughts of Ernst Mach and the Vienna Circle to Europe – The cases of Finland and Germany', forthcoming in: *Science and Education*, Springer, New York.
- Siemens, K.H., Siemens, H.: 2008b, 'Ideas of Ernst Mach Teaching Science', *5th Int. Seminar on Quality Management in Higher Education (QM 2008)*, Romania, June 2008.
- Visser, H.: 2002, 'Wittgenstein's Machist Sources', in Blackmore, Itagaki and Tanaka (eds.), *Ernst Mach's Vienna (1895-1930)*, Kluwer, Dordrecht.
- Wittenberg, A.I.: 1968, *The Prime Imperatives: Priorities in Education*, Clarke, Irwin & Company, Toronto.

6. Teaching Ethics and Peace to Science and Engineering Students: A Workshop, University of Hamburg, 15 -17 October 2008

The natural and engineering sciences produce knowledge and technology which can be abused or used to the better. Students of science and engineering are often unaware of related ethical and social dilemmas which they will face in their future careers. It is both a challenge and an opportunity to address this theme in university teaching to science and engineering students.

In October 2008 an international workshop “Teaching ethics and peace to science and engineering students” will be held at University of Hamburg. The organizers are involved in teaching relevant to the topic at the Universities of Hamburg and Copenhagen and at the Hamburg Peace Research Institute (IFSH).

This workshop will be an excellent forum to evaluate pioneering approaches, to analyse structural obstacles and to exchange experience from best practice examples in order to strengthen related developments.

The workshop will bring together three target groups:

- (a) university teachers who are already teaching respective courses,
- (b) university teachers who are interested in developing and implementing such courses,
- (c) decision makers and facilitators involved in curriculum development or in establishment, accreditation and evaluation of respective interdisciplinary teaching programs.

Participation is limited to 30. The deadline for applications for participation is 30 July, 2008. Please use the web link for information on registration: <http://www.znf.uni-hamburg.de/ethics-and-peace.html>

Dr. Tom Børsen, University of Copenhagen, Center for the Philosophy of Nature and Science Studies

Prof. Dr. Martin Kalinowski, University of Hamburg, Carl Friedrich von Weizsäcker Center for Science and Peace Research (ZNF)

Prof. Dr. Götz Neuneck, Institute for Peace Research and Security Policy at the University of Hamburg (IFSH)

Prof. Dr. Hartwig Spitzer, University of Hamburg, Department of Physics and ZNF

--

Further information available from:

Dr Tom Boersen

Center for the Philosophy of Nature and Science Studies

University of Copenhagen

borsen@nbi.dk

<http://www.nbi.dk/~natphil/prs/tbh/Borseneng.HTML>

7. Hong Kong Project for Promotion of Nature of Science (NOS) and Science Technology and Society (STS)

Teaching resources for infusing NOS and STSE in 12 science topics for senior secondary school (grade 10 to 12) developed by a team of Hong Kong science educators can be accessed and downloaded at the website <http://learningscience.edu.hku.hk>.

Each resource package consists of teachers' guides, students' worksheets, PowerPoint presentations and the associated video files. The developers acknowledge the generous support from the Quality Education Fund by the Hong Kong SAR government.

Further information is available from Dr. Alice Wong, Faculty of Education, University of Hong Kong (aslwong@hkucc.hku.hk)

8. *Science & Education* Journal Report

(a) Journal on the Web

The journal *Science & Education* is now available on the web at: <http://www.springerlink.com/> (then PUBLICATIONS, then S, then 'Science & Education'), or more directly at: www.springer.com/journal/11191 . Or the articles can be accessed directly at: <http://springerlink.metapress.com/content/1573-1901/>

All articles can be downloaded as pdf files for free if the individual's institution subscribes to the relevant Springer journal package; otherwise they can be downloaded for a fee.

Alternatively subscription renewals for printed journals and new subscriptions (USD100 pa, with discount for students, retired faculty and scholars from depressed economies), can be effected at the IHPST web site: www.ihpst.org

The Springer site is now linked to Google, and articles can be searched in Google by typing in author name and first words of title. This goes direct to the Springer site and the pdf file of the article.

Approximately 3,000 institutions around the world have subscribed to the on-line version of the journal, while many institutions have subscriptions to both print and on-line versions.

The on-line version is heavily used. In 2007 there were 37,593 article-downloads from the Springer site; this was a 60% increase over the 23,584 downloads in 2006. These figures make *Science & Education* one of the most utilised of all Springer education journals.

The web site provides many services to researchers:

- # The 'On Line First' section allows access to all accepted, forthcoming articles in the journal. As soon as an article is accepted for publication, a typeset pdf version of it is posted on the web and can be accessed by individual journal subscribers or by individuals whose institutions subscribe to a Springer package that includes '*Science & Education*'.
- # The Contents of each issue of the journal, back to Volume 1 Number 1 in 1992, are available. These can be downloaded by subscribers and individuals whose institutions subscribe to the journal. They are also available, at a cost, to non-subscribers.
- # Full details of the Editorial Board and Submission process are posted.

(b) Manuscript Submissions

Scholars can submit manuscripts in file form direct to the journal at:

www.editorialmanager.com/sced/

Thereafter they can check on its progress through the review process. Most submissions are reviewed by three senior scholars, usually involving a spread of educator, historian, philosopher or cognitive scientist. The submission site also has a guide to the journal's format and style conventions.

(c) Copyediting Assistance for Manuscripts from Non-English Authors

The journal publishes many works by scholars whose native language is not English. Copyediting of these papers is very time-consuming and assistance would be greatly appreciated. The papers would all be ones that have passed review and are in reasonable linguistic shape, but they do need refinement. Volunteers would be asked to copyedit no more than one paper per year.

If any folk are able to assist in this important task, please just send an email to the editor.

(d) Volume 13, 2004, For Sale

Surplus copies of Volume 13 (2004, 8 numbers, 840pp) are for sale for USD10 (postage included). Orders can be placed at www.ihpst.org under 'Publications – Order Form'.

Volume 13 Nos. 1-2

POSITIVISM AND SCIENCE EDUCATION: A RE-EVALUATION

MICHAEL R. MATTHEWS / Reappraising Positivism and Education: The Arguments of Philipp Frank and Herbert Feigl

THOMAS E. UEBEL / Education, Enlightenment and Positivism: The Vienna Circle's Scientific World-Conception Revisited

DENIS PHILLIPS / Two Decades After : "After The Wake: Postpositivistic Educational Thought"

G. KRISHNA VEMULAPALLI & HENRY C. BYERLY / Karl Hempel's Philosophy of Science: How to Avoid Epistemic Discontinuity and Pedagogical Pitfalls

PHILIPP FRANK / The Place of Philosophy of Science in the Curriculum of the Physics Student (orig. 1947)

HERBERT FEIGL / Aims of Education for Our Age of Science: Reflections of a Logical Empiricist (orig.1955)

Volume 13 No. 3

ANTON E. LAWSON / *T.rex*, the Crater of Doom, and the Nature of Scientific Discovery

DOUGLAS ALLCHIN / Pseudoscience and Pseudohistory

STEPHEN BRUSH / Comments on the Epistemological Shoehorn Debate

ISABEL PAIXAO, SILVIA CALADO, SILVIA FERREIRA, VANDA ALVES & ANA M.

MORAIS / Continental Drift: The Crazy Idea of a Meteorologist who Faced Geology as a Hobby

LONE MORRIS JORGENSEN & SUE RYAN / Relativism, Values and Morals in the New Zealand Curriculum Framework: Implications for Teacher Education

MORDECHAI BEN-ARI / On Random Numbers and Design

Volume 13 Nos. 4-5

THE PENDULUM: Scientific, Historical, Philosophical & Educational Perspectives Part I

MICHAEL R. MATTHEWS, COLIN GAULD & ART STINNER / The Pendulum: Its Place in Science, Culture and Pedagogy
 RANDALL D. PETERS / The Pendulum in the 21st Century: Relic or Trendsetter?
 RONALD NEWBURGH / The Pendulum: A Paradigm for the Linear Oscillator
 ZVI BIENER & CHRISTOPHER SMEENK / Pendulums, Pedagogy and Matter: Lessons from the Editing of Newton's *Principia*
 COLIN GAULD / The Treatment of the Motion of the Simple Pendulum in Some Early 18th Century Newtonian Textbooks
 PETER MACHAMER & BRIAN HEPBURN / Galileo and the Pendulum: Latching on to Time
 ROBERT NOLA / Pendula, Models, Constructivism and Reality
 LOUIS B. ROSENBLATT / The Poet and the Pendulum
 TREVOR G. BOND / Piaget and the Pendulum
 ROBERT J. WHITAKER / Types of Two-Dimensional Pendulums and Their Uses in Education
 MARIANNE BARNES, JAMES GARNER, DAVID REID / The Pendulum as Vehicle for Transitioning from Classical to Quantum Physics: History, Quantum Concepts and Educational Challenges
 CATHY MARIOTTI EZRAILSON, G. DONALD ALLEN & CATHLEEN C. LOVING / Analyzing Dynamic Pendulum Motion in an Interactive Online Environment Using Flash
 IGAL GALILI & DAVID SELA / Pendulum Activities in the Physics Curriculum: Used and Missed Opportunities
 MANABU SUMIDA / The Public Understanding of Pendulum Motion: From 5 to 85 Years Old

Volume 13 No. 6

NAHUM KIPNIS / Chance in Science: The Case of Electromagnetism
 MIKE U. SMITH & HARVEY SIEGEL / Knowing, Believing and Understanding: The Goals of Science Education
 WILLIAM COBERN / Apples and Oranges: A Rejoinder to Smith and Siegel
 PETER DAVSON-GALLE / Understanding: 'Knowledge', 'Belief' and 'Understanding'

Volume 13 No. 7-8

THE PENDULUM: Scientific, Historical, Philosophical & Educational Perspectives Part II

KLAUS WELTNER, A. SERGIO ESPERIDIÃO, ROBERTO FERNANDES SILVA ANDRADE & PAULO MIRANDA / Introduction to the Treatment of non-linear Effects using a Gravitational Pendulum
 CÉSAR MEDINA, SANDRA VELAZCO & JULIA SALINAS / Experimental Control of a Simple Pendulum Model
 RANDALL D. PETERS / Soup-can Pendulum
 NORMAN PHILLIPS / What Makes the Foucault Pendulum Move Among the Stars?
 COLIN GAULD / The Treatment of Cycloidal Pendulum Motion in Newton's *Principia*
 AMIR D. ACZEL / Léon Foucault: His Life, Times and Achievements
 MICHAEL R. MATTHEWS / Idealisation and Galileo's Pendulum Discoveries: Historical, Philosophical and Pedagogical Considerations
 AGUSTÍN ADÚRIZ-BRAVO / Methodology and Politics: A Proposal to Teach the Structuring Ideas of the Philosophy of Science through the Pendulum
 DENNIS LOMAS / Degree of Influence on Perception of Belief and Social Setting: Its Relevance to Understanding Pendulum Phenomena
 PAUL ZACHOS / Pendulum Phenomena and the Assessment of Scientific Inquiry Capabilities

ERIN STAFFORD / What the Pendulum can Tell Educators about Children's Scientific Reasoning
 MICHAEL FOWLER / Using Excel to Simulate Pendulum Motion and Maybe Understand
 Calculus a Little Better
 ROBERT N. CARSON / Teaching Cultural History from Primary Events
 COLIN GAULD / Pendulums in the Physics Education Literature: A Bibliography

9. Darwinian Anniversary Year, 2009, a Journal Special Issue, Call for Papers

The year 2009 is a Darwinian double anniversary: 200 years since Darwin was born (12 February 1809) and 150 years since the publication of *On the Origin of Species* (24 November 1859). To celebrate the occasion a special multiple-issue of *Science & Education* will be published.

Researchers working on areas related to Darwinism and evolution education are invited to contribute to this special issue. Conceptual, theoretical, empirical or position-based manuscripts are welcome. Examples of topics may include (but are not limited to) the following:

<ul style="list-style-type: none"> • Darwinism in the history and philosophy of science • Darwin's methodology and theorizing • Historical treatments of <i>The Origin</i> • Darwinism and politics • Darwinism and religion • Current status of evolutionary theory • Public understanding and acceptance or rejection of evolution, especially in non-Western cultures • Evolutionary explanations 	<ul style="list-style-type: none"> • Evolution and teleology • Research in evolution education • Evolution and the Nature of Science • Creationism and Intelligent Design • Cognitive barriers in understanding evolution • Rationales and strategies for teaching evolution when it is controversial • The teaching of evolution in cultures where Darwinism is rejected • <i>Other appropriate topics</i>
--	---

A number of prominent scholars are contributing invited essays. These include:

David Depew, History, University of Iowa: current historical studies of Darwinism.

Thomas Glick, History, Boston University: the comparative reception of Darwinism, with special attention to its reception in non-western countries.

Robert Pennock, Philosophy, Michigan State University: research relating to intelligent design and creationism

Michael Ruse, Philosophy, Florida State University: on Darwinism from a philosophical perspective.

Mike Smith, Medicine, Mercer University: contemporary science education research relating to the teaching and learning of evolution.

Paul Thagard, Philosophy and Psychology, University of Waterloo: cognitive and social impediments to acceptance of natural selection.

Submission Date: **December 31, 2008**

Anticipated Publication Date: **November, 2009**

Manuscripts, with Abstract, should be submitted for review direct to:

www.editorialmanager.com/sced/

Notification of intention to submit and subject matter is appreciated as it assists coordination and planning of the issue. Questions and inquiries should be directed to either of the guest editors:

David W. Rudge
Biological Sciences & The Mallinson Institute
for Science Education, Western Michigan
University, USA
email: david.rudge@wmich.edu

Kostas Kampourakis
Geitonas School,
Athens,
GREECE
email: kkamp@ath.forthnet.gr

10. Applied HPS in the Classroom, Journal Special Issue, Call for Papers

Research and discussion about the multiple contributions of history and philosophy of science (HPS) to science teaching has gone on for many years. This special issue will focus on research dealing with applied and innovative projects concerning the “realization” in the classrooms of the various proposals about the use of HPS in science teaching.

HPS has provided a fruitful background for developing Nature of Science (NOS) instructional units, materials and teaching approaches. At the same time, it has offered efficient resources to researchers and educators in order to develop and evaluate classroom activities concerning the interactions of Science and Culture. HPS also features in the many goals proposed for Scientific Literacy that can be found in current curricular materials.

This special issue of *Science & Education* will offer to educators and researchers working in all the above areas (HPS, NOS, Science and Culture, Scientific Literacy) a forum to communicate their research, ideas, questions and worries concerning the application of HPS in classrooms.

Conceptual, theoretical, empirical or position-based manuscripts are welcome. Accordingly, examples of topics may include (but are not limited to) the following:

- Instructional material design inspired by history and philosophy of science
- HPS didactical/instructional units
- HPS programs, units and textbooks
- HPS in teacher education proposals
- HPS assessment in the classroom
- HPS and ICT in classroom proposals
- Cross-disciplinary approaches to HPS teaching in the classrooms
- Identifying in the classroom new research question for HPS
- Research methodology in the classroom concerning HPS
- HPS action research

The journal, founded in 1992, is published by Springer, and is associated with the International History, Philosophy and Science Teaching Group. It is now the most downloaded of all Springer Education journals, with 37,600 articles downloaded in 2007.

Information about the IHPST Group, and journal style and formatting conventions, can be found out at: www.ihpst.org

Manuscripts, with Abstract, should be submitted for review direct to:
www.editorialmanager.com/sced

Submission date: **March 1st, 2009.**

Further questions and inquiries, as well as intention to submit, should be directed to the guest editors:

Fanny Seroglou School of Primary Education Faculty of Education Aristotle University of Thessaloniki Greece seroglou@eled.auth.gr	Agustín Adúriz-Bravo CEFIEC Faculty of Science University of Buenos Aires Argentina aadurizbravo@cefiec.fcen.uba.ar
---	---

11. XXIII International Congress of History of Science and Technology 26 – 31 July, 2009, Budapest, Hungary

The Hungarian National IUHPS Committee is pleased to invite you to attend and take an active part in the XXIII International Congress of History of Science and Technology in Budapest between 26 and 31 July, 2009.

The XXIII International Congress of History of Science and technology will be supported by the Hungarian Government, the Hungarian Academy of Sciences, the Budapest City Council, the Federation of Technical and Scientific Societies and other local institutions and organisations.

The World Academy of Young Scientists (with its seat in Budapest) will contribute to wide participation of young people from all over the world.

Budapest is undoubtedly one of the most beautiful metropolises in the world. The warm hospitality of the people, excellent food and wine, reliable and frequent public transportation, vivid cultural life, rich museums attract millions of visitors every year. Budapest is easy to reach, by air and on the ground, visitor-friendly visa policy, value-for-the-price services and goods, pleasant climate also make Hungary one of the most popular meeting venues world-wide.

Some Important Dates:

Deadline for determination of the symposia programs	15 December, 2008
Deadline for abstract submission	15 January, 2009
Deadline for early registration	15 March, 2009
Deadline for hotel reservation	30 April, 2009
Abstracts on the web	30 June, 2009
Opening of the Congress	26 July, 2009

Full details available at: <http://www.conferences.hu/ichs09/>

12. Division of History of Science and Technology (DHST)

(The following is a short historical note on the Division of History of Science and Technology (DHST) of the International Union of History and Philosophy of Science, sponsors of the Budapest Conference)

The International Academy of History of Science, the ancestor of the DHST, came into existence in 1928, at the Oslo Congress of Historical Sciences, when a group of scholars decided that the field should be institutionalised. This group first constituted an informal Academy. Over the years the Academy underwent some reforms: from a society of individual members, it gradually developed into a larger institution including more and more national committees. Its official journal was *Archeion*, which was edited by Aldo Mieli.

When UNESCO was founded, it established links with other bodies, more particularly, it set up a partnership with the International Council of Scientific Unions (ICSU), which had been founded in 1931. New scientific Unions were set up and the Academy was invited to elaborate the Statutes of the International Union of History of Science (IUHS), which were adopted in 1947, at the time when IUHS joined ICSU. On its side, the International Union of Philosophy of Science (IUPS) was created in 1949, but was not immediately admitted as a member of ICSU.

Indeed, it was in 1956 that the IUPS and the IUHS were firmly invited by ICSU to merge into a single Union, and the International Union of History and Philosophy of Science was created with its two Divisions: the Division of History of Science (DHST) and the Division of Logic, Methodology and Philosophy of Science (DLMP). However, the two bodies have always kept organising their congresses separately. In order to bring the two divisions closer, it was decided, in 1971, to set up a joint DHST-DLMP commission entrusted with the holding of regular joint conferences on matters of common interest for both divisions.

The Moscow congress (1971) saw the definite institutional separation between the Union and the Academy. The latter became an association of distinguished scholars publishing a journal, the *Archives Internationales d'Histoire des Sciences* and the *Collection of Studies*. From the Moscow congress on, the Academy has been playing, in an unofficial capacity, the role of adviser to the Union.

In recent years, since the IUHPS/DHST represents in some ways ICSU's historical consciousness, efforts were made to establish closer co-operation between IUHPS/DHST and the other Unions. It is in that spirit that five inter-Union Commissions were set up with the International Union of Geological Sciences (Paris, 1968), the International Union of Mathematics (Moscow, 1971), the International Geographical Union (Moscow, 1971), the International Union of Soil Sciences (Liège, 1997). Moreover, the DHST Commission on Bibliography and Documentation launched in 1999 a major project on the preservation of the archives of contemporary scientists which gathered representatives from IUPAC, IUPAP, ICSTI, ICSU Press, IUSS, the IAU.

The two Divisions, the DHST and the DLMP organize their own international congress once every four years.

The DHST's last congresses took place in Mexico City in 2001 and Beijing 2005 and the next is going to take place in Budapest 2009. Financial support for the DHST comes from the subscriptions of the 49 national committees that adhere to the division. Its scholarly work is conducted mainly through its 13 scientific commissions, 5 inter-union commissions, and 3 independent scientific sections.

With such a structure, the quality of the DHST's work is largely determined by the vigor of its commissions and sections, and inevitably the profile of activity over the years has been variable. But, aided by the exceedingly modest support that DHST has been able to give, several commissions and sections have achieved striking results, in the form of meetings, newsletters, and scholarly publications.

The Teaching Commission

In mid-2007 the Teaching Commission was reconstituted. Prof. Michael Matthews, accepted the position of President of the Commission and Prof. Costas Skordoulis accepted the position of Secretary of the Commission.

The web site of the Teaching Commission was established: <http://dhst-tc.org>

The Teaching Commission has basically three purposes:

First a disciplinary purpose: to assist in the better and more informed teaching of history of science as a subject in universities, and in high schools where appropriate.

This goal can be achieved by advertising teaching materials, books, web sites, holding symposia and conferences on teaching history of science, etc. An important part of this function will be served by better and more sophisticated use of web communication, for instance by trying to link together the 'Teaching Committees' of the different national History of Science societies and associations, so that those inquiring to one committee can see links to our central DHST Teaching Division web site.

Second a service purpose: to promote the utilisation of history of science in university and school science courses, and in programmes for the preparation of science teachers.

This goal can also be achieved by advertising curricular materials especially national statements such as are found in the US Science Education Standards and the Norwegian Education Framework, bringing HPS&ST books and appropriate web sites to the attention of science teachers and teacher educators, holding symposia and conferences on teaching history of science, maintaining a web site listing all relevant research literature and reports pertaining to the teaching of history of science, etc. Again there are a number of national HPS&ST associations, and sub-groups within larger science education associations, that can be linked together on the web and hence back to our Teaching Commission website.

Third a cultural purpose: to show that the history of science can contribute positively to better understanding of some of the major issues concerning contemporary cultural conflict, multiculturalism and globalisation. Re-examination of the European Enlightenment and the contemporary appraisal of its core arguments is clearly one component of this cultural purpose that the Teaching Commission can promote.

Activities Plan for the Calendar Years 2008, 2009

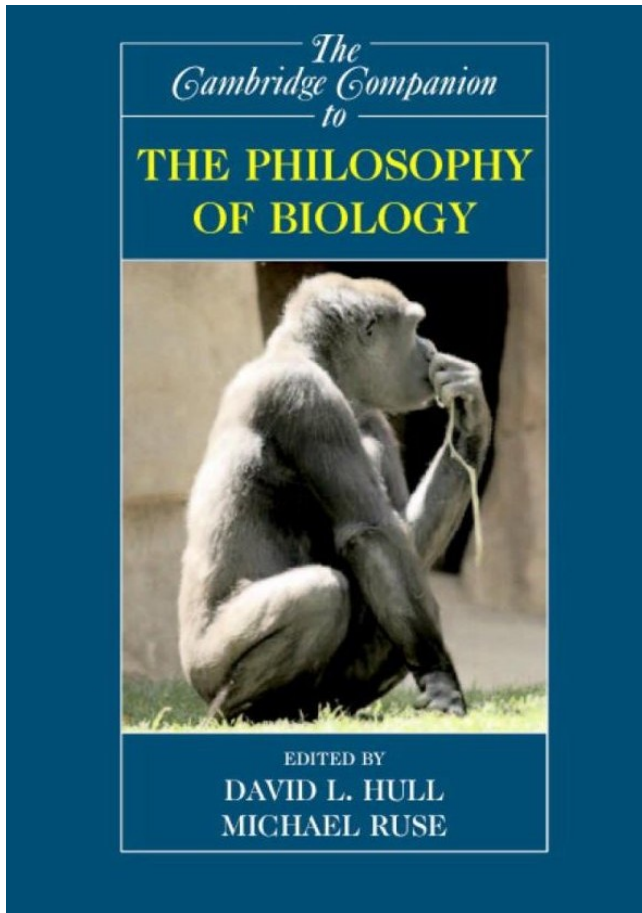
The Teaching Commission is planning to organise a Symposium in Greece. The topic of the Symposium will be "Teaching History of Science".

The Teaching Commission also plans to hold a symposium at the 2009 Budapest conference on 'The *Origin of Species*: What are the Pedagogical Issues 150 years later?' As 2009 is also the two hundredth year anniversary of the birth of Darwin, the topic is especially appropriate.

Kostas Skordoulis, Dept. of Primary Education, University of Athens (kskordul@primedu.uoa.gr)

13. Book Notes

(i) David L. Hull & Michael Ruse (eds) (2007). *The Cambridge Companion to the Philosophy of Biology*. (Series: Cambridge Companions to Philosophy) Cambridge University Press. Paperback, £19.99, 552 pages, ISBN: 978-0-521-61671-3, <http://www.cambridge.org/uk/catalogue/catalogue.asp?isbn=9780521616713>



Darwinism is unquestionably a central theme in the philosophy of biology and many pages are usually devoted to it in most relevant books. This book, edited by the founders of the field, not only includes essays on central issues related to Darwinism but also includes several others on various areas of the subject. David Hull and Michael Ruse, themselves not contributing to this volume, express the intention to promote the work of other scholars, with some of the most important representatives of a new generation of philosophers among them. It is perhaps due to this fact that many modern issues, which are not often found in books on the philosophy of biology, are included in this volume.

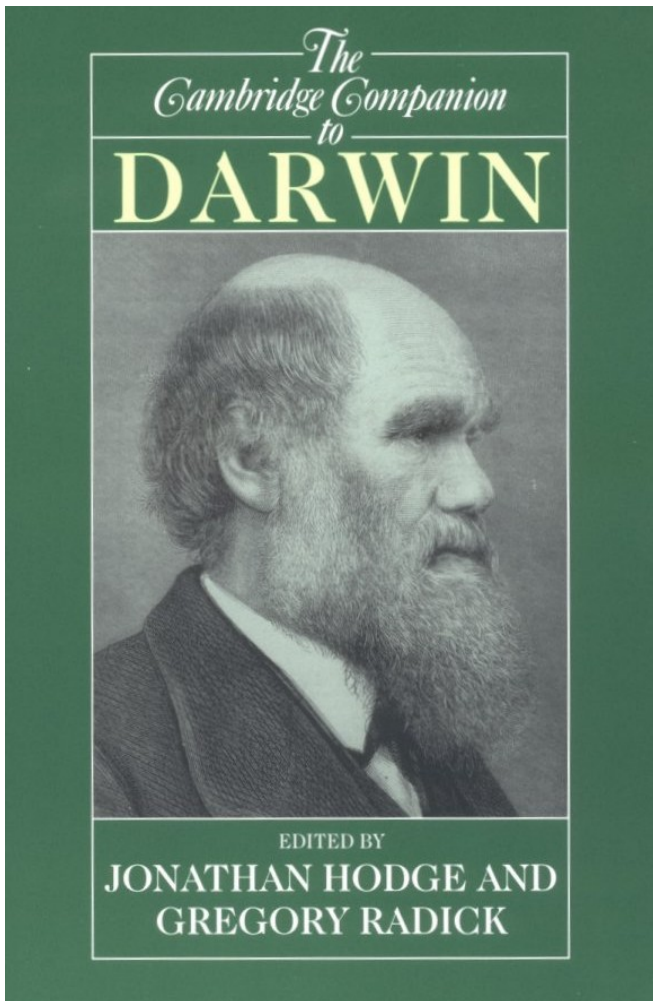
There are 23 chapters in the book that provide an extensive coverage of most aspects of the philosophy of biology. These include some classical themes such as adaptation, population genetics, units and levels of selection, gene, reductionism, teleology, human evolution, evolutionary psychology, biology and religion as well as more modern themes such as information in

biology, evolutionary developmental biology ('evo-devo'), neurobiology, human sexuality and many more. In all cases, the authors present recent or current developments in the respective fields. The book is not divided into parts but the chapters are arranged in an order that brings related topics close to each other, although each chapter can stand on its own. Finally, although several complex issues are discussed, the book is appropriate for the general reader.

Why is this book interesting for teachers and educators? We usually teach concepts by providing textbook-style definitions, ignoring at the same time that a lively philosophical discussion may exist on some topics. For example, adaptation can be defined as an outcome of natural selection or as a trait that contributes to fitness or even as a process. While philosophical details may not be necessary for science teaching, it is useful that teachers and educators are aware of them. Knowing the current philosophical discussion about concepts such as the gene or the levels of selection can make science teaching more informative and more accurate. On the other hand, being aware of recent developments such as evolutionary developmental biology helps teachers and educators prepare instructions which are up-to-date. For these reasons, *The Cambridge Companion to the Philosophy of Biology* is a very valuable resource for anyone teaching biology.

Kostas Kampourakis, Geitonas School, Athens, Greece.

(ii) Jonathan Hodge & Gregory Radick (Eds) (2003). *The Cambridge Companion to Darwin* (Series: Cambridge Companions to Philosophy), Cambridge University Press. Paperback, £19.99, 500 pages, ISBN: 0 521 77730 5, <http://www.cambridge.org/uk/catalogue/catalogue.asp?isbn=9780521777308>



Scores of books have been written about Darwin and his theory of evolution during the last thirty years, forming what has been described as the “Darwin industry”. However, not all these books are as important as the *Cambridge Companion to Darwin* is. Jonathan Hodge and Gregory Radick, the editors of this book, have accomplished something very useful for readers that, to the best of my knowledge, has not been accomplished since 1985 when *The Darwinian Heritage*, edited by David Kohn, was published: to provide an extensive coverage of recent historical and philosophical scholarship on Darwin.

This achievement could have only been possible by bringing together a very distinguished team of contributors, actually some of the most prominent philosophers and historians: Jonathan Hodge, Gregory Radick, Phillip Sloan, Jim Endersby, Robert Richards, Kenneth Waters, David Hull, John Hedley Brooke, Diane Paul, Jean Gayon, Elliott Sober, Kim Sterelny, Alex Rosenberg, Michael Ruse, Daniel Dennett, Owen Flanagan, and Philip Kitcher.

The book is divided into four parts. The first part entitled *Darwin’s theorizing* deals with the development of Darwin’s thinking from his early years until the publication of the *Origin of Species*. The second part entitled *Historical contexts* focuses on the wider contexts in which Darwin’s theory was developed, with two important essays on the relation between Darwin and Victorian Christianity, as well as between Darwin and Victorian philosophy of science. Part three entitled *Philosophical themes* raises some important issues related to metaphysics and epistemology, the philosophy of mind, moral philosophy and social theory, and religion. Finally, in the fourth part entitled *Ways forward*, particular implications of Darwin’s theory are discussed.

As the editors write in their introduction, this book seeks to promote a better informed debate about Darwin and his influence, by offering a sample of historical and philosophical interpretations of Darwin and Darwinism. While all recent developments in these interpretations are made available to experts, the book can also be useful to non-experts as it presents most major issues related to Darwin and his evolutionary theory written in a clear and informative style. Overall, this book is indeed an excellent and very useful companion to Darwin. Hence, it is a valuable source for anyone interested in Darwinism and teaching evolution in its historical context.

Kostas Kampourakis, Geitonas School, Athens, Greece.

14. Current Research

Apart from contributions to *Science & Education* the following are some papers published in recent years that bear upon the research concerns of the IHPST Group.

Suggestions for up-dating this list should be sent to the Editor at m.matthews@unsw.edu.au

- Niaz, M.: 2007, 'Can findings of qualitative research in education be generalized?', *Quality and Quantity: International Journal of Methodology* **41**, 429-445.
- Costu, B., Ayas, A., Niaz, M., Ünal, S., & Calik, M.: 2007, 'Facilitating conceptual change in students' understanding of boiling concept', *Journal of Science Education and Technology* **16**, 524-536.
- Carson, R. & Rowlands, S.:2007, 'Strategies for Affecting the Necessary Course of Cognitive Growth as an Integral Part of Curricular and Instructional Planning', *Interchange* **38**(2).
- Schulz, R. M.: 2007, 'Lyotard, Postmodernism and Science Education. A Rejoinder to Zembylas', *Educational Philosophy and Theory*, **39**(6), 633-656.
- El-Hani, C. N. & Mortimer, E. F. :2007, 'Multicultural Education, Pragmatism, and the Goals of Science Teaching', *Cultural Studies of Science Education* **2**(3): 657-687.
- El-Hani, C. N.:2007, Between the Cross and the Sword: The Crisis of the Gene Concept. *Genetics and Molecular Biology***30**(2), 297-307.
- Ford, M.:2008, 'Disciplinary authority and accountability in scientific practice and learning', *Science Education* **92**, 404-423.

The following books have recently been published by group members:

- Maria Rentetzi, *Trafficking Materials and Gendered Experimental Practices: Radium Research in Early 20th Century Vienna*: 2007, Columbia University Press, New York.
- Andre Koch Torres Assis & Julio Akashi Hernandes: 2007, *The Electric Force of a Current. Weber and the Surface Charges of Resistive Conductors Carrying Steady Currents*, Apeiron Books, Montreal.
- This book is also available as a pdf file from author at: assis@ifi.unicamp.br

15. Publications for Sale

The following publications can be ordered from the IHPST Group at www.ihpst.org :

- #1 *CD Proceedings of the 6th IHPST Conference, Denver, 2001*, 100 papers, W. McComas (ed.), USD10.
- #2 *CD Proceedings of the 7th IHPST Conference, Winnipeg, 2003*, 100+ papers, D. Metz (ed.), USD10.
- #3 *Science Education and Culture*, F. Bevilacqua, E. Giannetto & M.R. Matthews (eds.), Kluwer, 2001, 362pp, USD20.
- #4 *Science & Education* journal Volume 2, 1993, 382pp, USD10.
- #6 *Science & Education* journal Volume 12, 2003, 808 pps, USD20.
- #7 *Science & Education* journal Volume 13, 2004, 840 pps, USD10.
- #8 *The Pendulum: Scientific, Historical, Philosophical & Educational Perspectives* (Michael R. Matthews, Colin Gauld & Arthur Stinner (eds.), Springer, 2005, USD20

16. Coming Conferences

August 9-12, 2008. International Network of Philosophers of Education (INPE), Kyoto University, Japan.

Details at: http://www.ucm.es/info/inpe/call_kyoto.pdf

October 21-24, 2008, 11th Brazilian Physics Teaching Research Meeting, Curitiba-Paraná, Brazil. The conference includes a strand on 'History, Philosophy and Science Teaching'.

Details from conference chair: Dr. Erika Zimmermann (xiedef@sbfisica.org.br), and at: <http://www.sbf1.sbfisica.org.br/eventos/epf/xi/index.shtml>
October 27-31, 2008, Ninth Argentine Symposium on Physics Education Research, Rosario.
Details from Susana Cabanellas, Graciela Utges: (sief9@fceia.unr.edu.ar)
November 6-9, 2008. US History of Science Society and US Philosophy of Science Association, Joint Conference, Pittsburgh.
Details at: <http://philsci.org/conferences/psa2008/> or <http://www.hssonline.org>
June 24-28, 2009. Tenth IHPST Conference, Notre Dame University, Notre Dame, IN
Details at: ihpst09@nd.edu, and www.nd.edu/~ihpst09
July 26-31, 2009. XXIII International Congress of History of Science and Technology, Budapest.
Details at: <http://www.conferences.hu/ichs09/>
August 31-September 4, 2009. ESERA Conference, Istanbul Turkey.
Details from M. Fatih Tasar: (mftasar@gazi.edu.tr) or <http://www.earli2009.org/>

17. IHPST Executive

After twenty years of very productive, but informal existence, the IHPST Group has held its first elections. The following members were elected to the indicated positions on the Council:

President:	Michael Matthews (m.matthews@unsw.edu.au)
Past-president:	William McComas (mccomas@uark.edu)
President Elect:	David Rudge (david.rudge@wmich.edu)
Secretary:	Pierre Boulos (boulos@uwindsor.ca)
Treasurer:	Robert Carson (rcarson@montana.edu)
Council Members:	Peter Heering (peter.heering@uni-oldenburg.de) Fanny Seroglou (seroglou@eled.auth.gr)
Student Member:	Roland Schulz (rmschulz@shaw.ca)
Programme Officer:	Don Howard (dhoward1@nd.edu)

Members of the Nominating Committee:

Elisabeth Cavicchi	(ecavicch@mit.edu)
Ismo Koponen	(ismo.koponen@helsinki.fi)
Igal Galili	(igal@vms.huji.ac.il)
Mark Lattery	(lattery@uwosh.edu)

18. Newsletter Items

This IHPST Electronic *Newsletter* goes to 1,500 email addresses on the IHPST list, and it is also posted to various science education, philosophy of education and HPS lists. Items for inclusion in the *Newsletter* are appreciated. These can be items for the ‘Recent Research’, ‘Recent Books’, ‘Books’ or ‘Conferences’ sections.

Submission of “Book Notes” are especially welcomed. They should follow the format and style as previously used in the newsletter, and sent as attachments to the editor. They are a way of bringing good and relevant books to the attention of the large group of scholars interested in the utilisation of historical and philosophical scholarship in addressing theoretical, curricular and pedagogical issues in science and mathematics education.

Please email newsletter material as an attachment (or journal subscriptions or publication orders) to: m.matthews@unsw.edu.au

19. IHPST Email List

The email list is used sparingly, perhaps once a month, to send group information such as contained in this Newsletter. It is a closed list, not an open discussion list.

If you receive this email message and wish to remove yourself from the IHPST list, send a message to: majordomo@explode.unsw.edu.au . In the body of the message, not the subject line, simply write: 'unsubscribe ihpst-group'.

Alternatively, if you have friends or colleagues who would like to subscribe to the list, tell them to send a message to: majordomo@explode.unsw.edu.au . In the body of the message, not the subject line, simply write: 'subscribe ihpst-group'.